

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method comprising the computer-implemented steps of:
while an XML processor performs a validation operation on an XML-based input stream,
while validating a particular XML element in said XML-based input stream,
causing said XML processor to generate one or more messages that indicate how to process ~~specific elements in said XML-based input stream based on~~ said particular XML element other than validating said particular XML element, by identifying one or more annotations that are associated with said ~~specific elements~~ particular XML element; and
responding to a request for information about said particular XML element by providing said one or more messages.
2. (currently amended) The method of Claim 1, further comprising the computer-implemented step of:
while said XML processor performs said validation operation on said XML-based input stream,
receiving a request[[s]] for said one or more annotations;
wherein the step of causing said XML processor to generate one or more messages is performed in response to said request[[s]].
3. (currently amended) The method of Claim 2, wherein the step of receiving a request[[s]] includes receiving a request via an application program interface through which information about said validation operation can be requested by an external application.

4. (previously amended) The method of Claim 1, wherein the step of causing said XML processor to generate one or more messages includes causing said XML processor to generate one or more messages that are transmitted in an output stream.
5. (previously amended) The method of Claim 1, wherein the step of causing said XML processor to generate one or more messages includes causing said XML processor to generate one or more messages before completion of said validation operation on said XML-based input stream.
6. (currently amended) The method of Claim 1,
wherein said validation operation includes performing a validation operation on [[a first]] said particular XML element of said XML-based input stream; and
wherein the step of causing said XML processor to generate one or more messages includes causing said XML processor to generate one or more messages that indicate how to process said [[first]] particular XML element, only if said [[first]] particular XML element is determined valid based on said validation operation on said [[first]] particular XML element.
7. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 1.
8. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 2.
9. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 3.

10. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 4.
11. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 5.
12. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 6.
13. (original) A method comprising the computer-implemented steps of:
while performing a validation operation on an XML-based input stream,
 receiving a request for information about the state of said validation operation;
 and
 responding to said request by providing said information about said state of said validation operation.
14. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request regarding whether a first element of said XML-based input stream is defined in corresponding information that dictates the structure of XML data.
15. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request regarding what data type definition is associated with first element of said XML-based input stream, wherein said data type is defined in information that dictates the structure of corresponding XML data.
16. (original) The method of Claim 15, wherein the step of receiving a request includes receiving a request regarding what data type definition is associated with an attribute of said first element, wherein said data type that is associated with said attribute is defined in said information that dictates the structure of corresponding XML data.

17. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request regarding whether a data type of content of first element of said XML-based input stream conforms to a corresponding data type definition in information that dictates the structure of corresponding XML data.
18. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request regarding a first annotation that is associated with first element of said XML-based input stream, wherein said first annotation is defined in information that dictates the structure of corresponding XML data.
19. (original) The method of Claim 18, wherein said information that dictates the structure of corresponding XML data comprises a second annotation definition that is associated with a second element of said XML-based input stream, and wherein the step of receiving a request includes receiving a request regarding said second annotation, the method further comprising the computer-implemented step of:
before responding to said request regarding said second annotation, responding to a request regarding whether said first element is defined in said information that dictates the structure of corresponding XML data.
20. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request regarding a status of said validation operation with respect to a first element of said XML-based input stream.
21. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request via an application program interface through which information about said validation operation can be requested by an external application.
22. (original) The method of Claim 13, wherein the step of receiving a request includes receiving a request from an event handler sent in response to an event received in a parser output stream.

23. (original) The method of Claim 13, wherein the step of responding to said request includes providing, in an output stream, said information about the state of said validation operation.
24. (original) The method of Claim 13, further comprising the computer-implemented step of:
parsing said XML-based input stream only once for both of said validation operation and operations that are dictated by annotations associated with elements in said XML-based input stream.
25. (original) The method of Claim 13, wherein information that dictates the structure of corresponding XML data in said XML-based input stream, with which said input stream is validated in said validation operation, comprises a plurality of schema definitions that are associated with a plurality of corresponding XML documents that could be constituent to said XML-based input stream.
26. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 13.
27. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 14.
28. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 15.
29. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 16.

30. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 17.
31. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 18.
32. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 19.
33. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 20.
34. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 21.
35. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 22.
36. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 23.
37. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 24.

38. (original) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 25.
39. (previously presented) A computer-readable medium storing instructions for:
a validator that validates elements and attributes in an XML-based input stream
against information that dictates the structure of corresponding elements and attributes, said validator comprising
a state machine that responds to requests for information about validating a
first element in said XML-based input stream, while validating said
first element.
40. (original) The system of Claim 39, wherein said state machine is able to respond to a request for information about an annotation associated with said first element, while validating elements or attributes in said XML-based input stream.
41. (original) The system of Claim 39, wherein said state machine is able to respond to a request that is responsive to an event in a parsed output stream that is based on said XML-based input stream.
42. (previously presented) The method of Claim 1, further comprising:
reading said annotations from metadata that corresponds to said XML-based input stream.
43. (previously presented) The method of Claim 1, further comprising:
reading said annotations from an XML schema that corresponds to said XML-based input stream.
44. (previously presented) The method of Claim 1, wherein the step of causing said XML processor to generate one or more messages includes causing said XML processor to generate one or more messages that indicate how to conform said specific elements to one or more requirements of an application that uses said specific elements.

45. (previously presented) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 42.
46. (previously presented) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 43.
47. (previously presented) A computer-readable medium carrying one or more sequences of instructions which, when executed by one or more processors, causes the one or more processors to perform the method recited in Claim 44.